

MOBILE TERMINALS AND METHODS FOR ESTIMATING GPS TIME BASED
ON TIMING OF INFORMATION FROM A WIRELESS COMMUNICATION
SYSTEM

ABSTRACT OF THE DISCLOSURE

A mobile terminal generates an estimate of GPS time. The mobile terminal
5 includes a cellular receiver, a GPS receiver, and a processor. The cellular receiver is
configured to receive communication signals from cells in a wireless communication
system. The GPS receiver receives GPS signals and determines a GPS time
reference therefrom. The processor estimates a cell time reference from the received
communication signals, and generates cell-to-GPS timing data that represents a time
10 offset between the cell time reference and the GPS time reference. The processor
then estimates GPS time based on a time indicator portion of a received
communication signal and the cell-to-GPS timing data. The estimated GPS time may
be used by the GPS receiver to acquire GPS signals.